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Neue und interessante Milben aus dem Genfer Museum XLVII. Oribatida Americana 7: Guatemala II (Acari)

by

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With 33 figures

Abstract

New and interesting mites from the Geneva Museum XLVII. Oribatida Americana 7: Guatemala II. (Acari). — A study of Oribatid mites originating from Guatemalan soil samples is presented. Eight of the twelve species examined proved to be new, two also necessitating the establishment of new genera (*Baloghacarus* gen. n., *Genavensia* gen. n.); this latter represents also a new family (Genavensiidae fam. n.) containing, apart from the new genus, the reallocated genera *Cultrobates* Willmann, 1930 and *Arcozetes* Hammer, 1958.

In the course of studies, initiated and supported principally by the Muséum d'Histoire naturelle, Genève, and with the aim of an exploration of the terricolous mite fauna of Central America and the Antilles, I have already reported on the Oribatids found in materials from Mexico, Dominica and Guatemala. In my preceding paper on Mexico (Mahunka 1983) I have summarized our knowledge concerning the region and also given details on the origin of the material now under study.

In the course of the study of the single soil sample collected by A. de Chambrier, it appeared that it was very rich. Besides interesting data concerning the zoogeography new taxa were discovered of a certain importance with respect to the Oribatid system. On the basis of the taxa involved, the region must unequivocally be relegated to the Neogaea, displaying close connections in several respects primarily to the fauna of Venezuela.

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LOCALITY

AC/15: Tikal, Petén, récolte à la main, 24.II.-3.III.1978.
Tikal, Petén, (W) [1], 24.II-27.II.1978. leg. M. et Mme Alain de Chambrier.

LIST OF THE IDENTIFIED SPECIES

Sphaerochthoniidae Grandjean, 1947

Sphaerochthonius fungifer sp. n.

Lohmanniidae Berlese, 1916

Torpacarus callipygus sp. n.

Epilohmanniidae Oudemans, 1923

Epilohmannia xena sp. n.

Nothridae Berlese, 1896

Nothrus willmanni sp. n.

Hermanniellidae Grandjean, 1934

Ampullobates nigriclavatus Grandjean, 1966:
AC/15 (W) (20 specimens)

Baloghacarus hauseri gen. n., sp. n.

Sacculobates horologiorum Grandjean, 1966:
AC/15 (W) (2 specimens)

Microzetidae Grandjean, 1936

Acaroceras dechambrieri sp. n.

Oppiidae Grandjean, 1954

Sternoppia striata sp. n.

Mochlozetidae Grandjean, 1960

Dynatozetes amplus Grandjean, 1960:
AC/15 (2 specimens)

[1] (W) = Extraction by WINKLER-MOCZARSKI apparatus.

Genavensiidae fam. n.

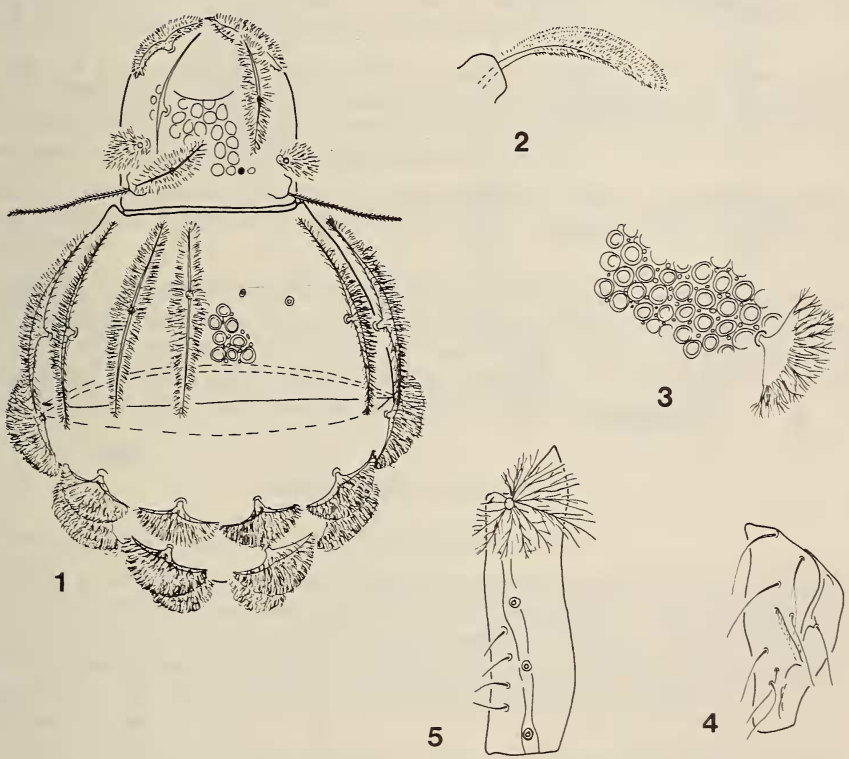
Genavensia hungarorum gen. n., sp. n.

Cultrobates heterodactylus Willm., 1930:
(1 specimen)

Sphaerochthonius fungifer sp. n.

Measurements: Length: 252-267 μ, width: 139-152 μ.

Dorsal side (Fig. 1): Rostrum elongately acute. Only median field of prodorsum with a sculpture of large foveolae, delimited anteriorly by sharp lines between points of origin of lamellar setae, rostral part smooth. Prodorsal hairs T-shaped, wide. Sensillus (Fig. 2) long, slightly widening.



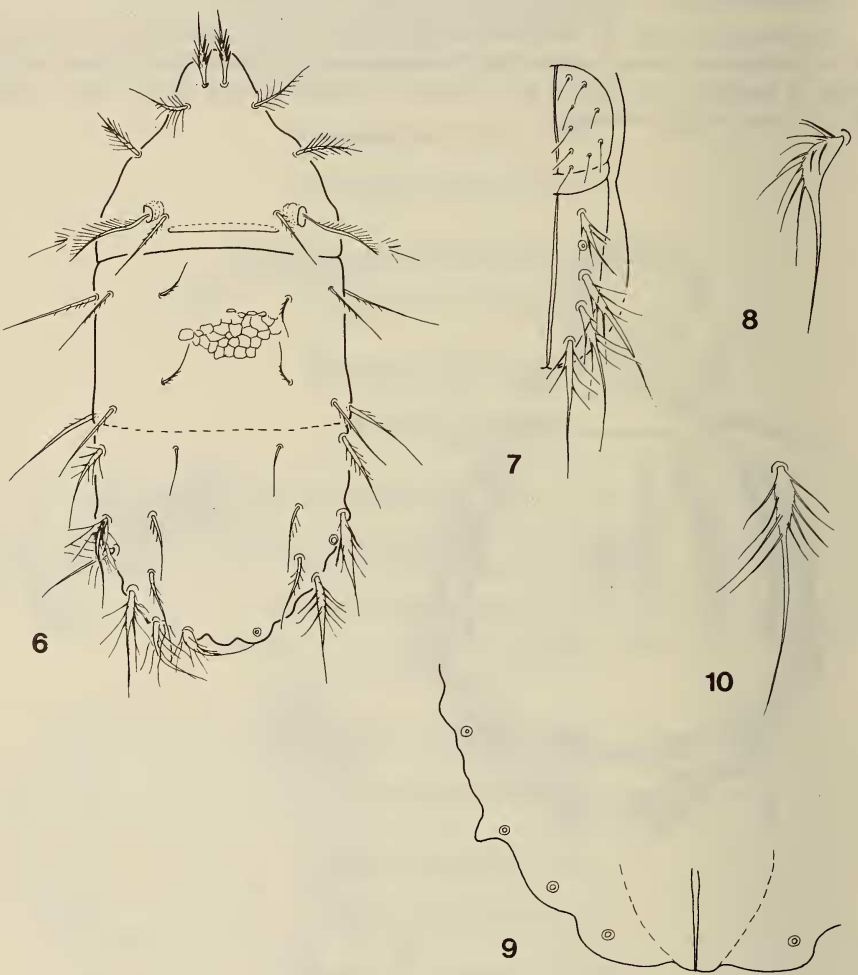
FIGS. 1-5.

Sphaerochthonius fungifer sp. n.
1. dorsal side; 2. sensillus; 3. sculpture of notogaster;
4. genital plate; 5. anal plate.

Notogastral surface with large, annuliform foveolae embracing triangular chitinous incrassations (Fig. 3). Hairs c_1-c_p T-shaped, hairs *e-h* very wide, fungiform.

Ventral side: Genital plate (Fig. 4) with 8 thin and long hairs. Anal plate (Fig. 5) with 4 fungiform and on the inner margin with 4 simple and thin hairs. Bases of fungiform setae connected by a longitudinal chitinous lath.

Legs tridactylous, heterodactylous; lateral claws terminally forked.



FIGS. 6-10.

Torpacarus callipygus sp. n.
6. dorsal side; 7. anogenital region; 8. seta p_2;
9. posterior margin of notogaster; 10. seta f_2.

Material examined: Holotype: Guatemala AC/15 (W); 15 paratypes, collected with holotype. Holotype and 9 paratypes in the MHNG [1], 6 paratypes (500-PO-79) in the HNHM [2].

Remarks: In the majority of its congeners, the notogastral hairs are thin, T-shaped, only *S. phyllophorus* Bal. et Mah., described from Bolivia, displays some widened, phylliform hairs; but this species shows a sculpture of polygonal reticulation and no fungiform setae.

Torpacarus callipygus sp. n.

Length: 557-586 μ, width: 242-267 μ.

Dorsal side (Fig. 6): Rostrum wide, flatly rounded. Prodorsal hairs basal fusiform, most of them with long cilia originating from the incrassate section. Sensillus weakly fusiform, with long, pectinate ciliation. Apart from rostrum, prodorsal margin and a narrow basal transverse zone, entire body surface with a polygonal sculpture: the single fields being actually tubercles. Notogastral margin laterally interrupted by 2 robust, tuberculiform, posteriorly flattened and enlarged, ridge-shaped elevations. Posterior marginal hairs of notogaster modified peculiarly (Fig. 9): bases widened like a plate; heavily ciliate. All other setae simple, at most ciliate.

Ventral side: Mentum with 2 pairs of hairs. Epimeral setal formula: 3-1-4-4. Majority of hairs with long cilia. Anogenital region (Fig. 7) characteristic of the genus. Genital plates undivided, 9 pairs of simple genital setae present. Anoadanal plates with 5 hairs each in a longitudinal row, basally with long cilia.

Material examined: Holotype: Guatemala AC/15 (W); 1 paratype, collected with the holotype. Holotype in the MHNG, Genève, paratype (501-PO-79) in the HNHM.

Remarks: The genus *Torpacarus* Grandjean, 1950 was described from Venezuela, but representatives have been found also in the Ethiopian Region (Ghana: Wallwork 1962). All four known species have a smooth body margin, without any larger tubercles or lamelliform protuberances posteriorly. The presence of such structures and the specially modified hairs distinguish the new species from all congeners.

Epilohmannia xena sp. n.

Measurements: Length: 596-732 μ, width: 286-340 μ.

Dorsal side (Fig. 11): Rostrum rounded, with short longitudinal rugae. Prodorsal surface with a heavy foveolate sculpture. Rostral hairs very thin and short; lamellar hairs thicker but also short; interlamellar hair long, nearly as long as bacilliform sensillus which is ornamented with robust scales. Notogastral surface with fine, punctate sculpture. Setae short, hairs *a* and *c* showing a relatively great difference in length.

All hairs ciliate.

Ventral side (Fig. 12): Epimeral surface punctate, epimeres 2 with a weak polygonal sculpture laterally. Some large foveolae near borders. Apodemes 1 terminating

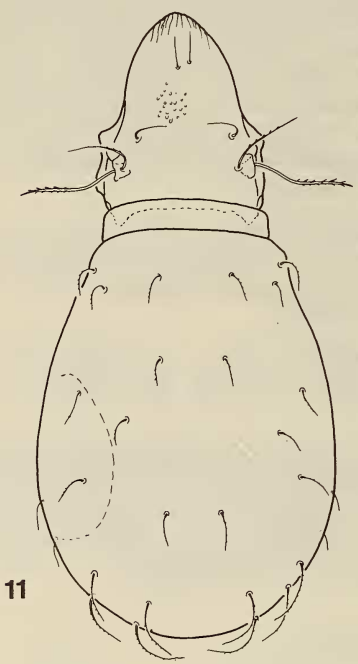
[1] MHNG = deposited in the Muséum d'Histoire naturelle, Genève.

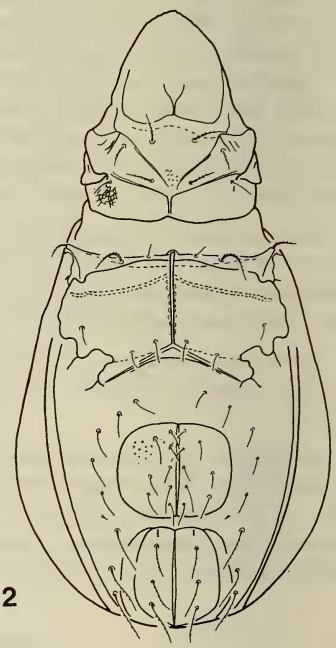
[2] HNHM = deposited in the Hungarian Natural History Museum, Budapest.

free, posterior epimeres nearly fused, no traces of apodemes 4 recognizable. Hairs 3*c* on very long chitinous pegs. Aggenital region with a weak heterotrichy, 4-6 pairs of setae, varying also within a single individual. No straight transverse suture separating anal and genital plates present. 8 pairs of genital, 3 pairs of anal and 3 pairs of adanal hairs.

Tarsus (Fig. 14) of leg IV with a strongly thickened spine, tibia with only 3 pairs of setae besides solenidium.

Material examined: Holotype: Guatemala AC/15 (W); 1 paratype, from the same sample. Holotype deposited in the MHNG, Genève, paratype in (502-PO-79) in the HNHM.





FIGS. 11-14.

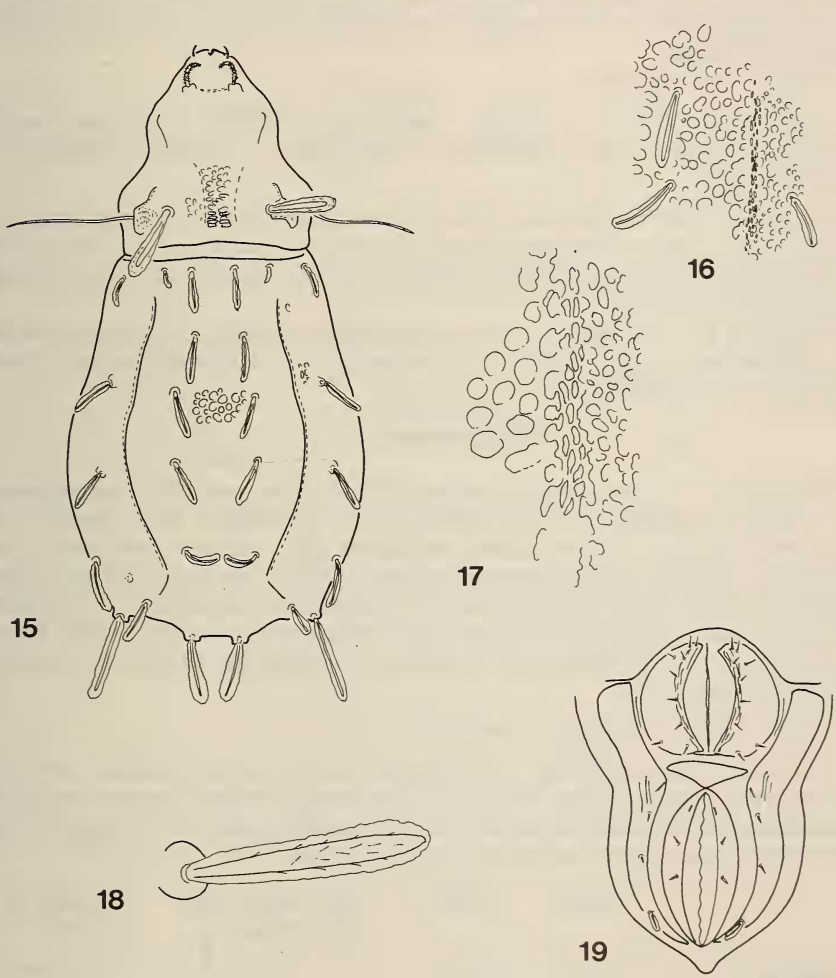
Epilohmannia xena sp. n.
11. dorsal side; 12. ventral side; 13. bothridial region; 14. leg IV.

Remarks: The main characteristics of the genus *Epilohmannia* Berlese, 1916 is the straight transverse suture between anal and genital region (? *Epilohmannoides* Jacot, 1916). This suture is absent in the new species, yet all other features refer so unequivocally to an assignment in this alliance that I am not considering a separation even at the subgeneric level.

Nothrus willmanni sp. n.

Measurements: Length: 800-854 μ, width: 402-446 μ.

Dorsal side (Fig. 15): Rostrum rounded but with a narrow and short incision medially. Rostral hairs transformed into short and arcuate spines, slightly roughened.



Figs. 15-19.

Nothrus willmanni sp. n.
15. dorsal side; 16-17. sculpture of notogaster; 18. seta *in*; 19. anogenital region.

Lamellar setae arising on robust apophyses, weak, verticillately barbed. Interlamellar hairs extremely large, widely phylliform owing to the superimposed secretion layer, laterally projecting beyond prodorsal margins (Fig. 18). Sensillus very long, bacilliform, slightly roughened. Prodorsum anteriorly and laterally with larger, rounded, posteriorly with smaller and angulate foveolae. Interbothridial region medially with an oblong pair of foveolae in a narrow zone. Notogastral hairs phylliform or spatulate, similarly to interlamellar ones. Posterior hair k_1 longest of all, hardly widening. Median field of notogaster with large and rounded foveolae, separated from marginal region by a narrow zone of well discernible minute tubercles (Figs 16, 17). Marginal region with smaller and more angulate foveolae.

Ventral side: Epimeral setal formula: 7-6 (5)-6 (5)-6. Inner margin of genital plate (Fig. 19) rugulose, position of setae as characteristic of genus. Of the 2 pairs of anal and 3 pairs of adanal hairs, ad_2 and ad_3 short and spiniform, while ad_1 considerably longer, elongately phylliform.

All legs monodactyle.

Material examined: Holotype: Guatemala — AC/15; 8 paratypes, from the same sample. Holotype and 5 paratypes in the MHNG, 3 paratypes (503-PO-79) in the HNHM.

Remarks: The new species is primarily characterized by the extremely long interlamellar hairs, unknown in species from either South America or any other region. The notogastral sculpture and the proportion of the hairs related to each other are also good distinguishing characters.

I dedicate the new species to one of the greatest German acarologists, the late Dr. C. Willmann, of great merits in the exploration of the Oribatid fauna of Central America and the Antilles.

Baloghacarus gen. n.

Diagnosis:A Hermannielloid habitus. Bothridia near each other on prodorsum, with immediately adjacent and extraordinarily long interlamellar hairs, these also near each other. Prodorsum without carina. Notogaster with 9 pairs of true hairs: 8 long, projecting and distally slightly incrassate pairs and 1 very short and simple pair posteromarginally (visible only in posterior view). All other setae reduced, that is recognizable only by their insertion points. Hairs disarranged on notogastral surface. 7 pairs of genital hairs with considerable differences in length, not originating behind each other in a single longitudinal row.

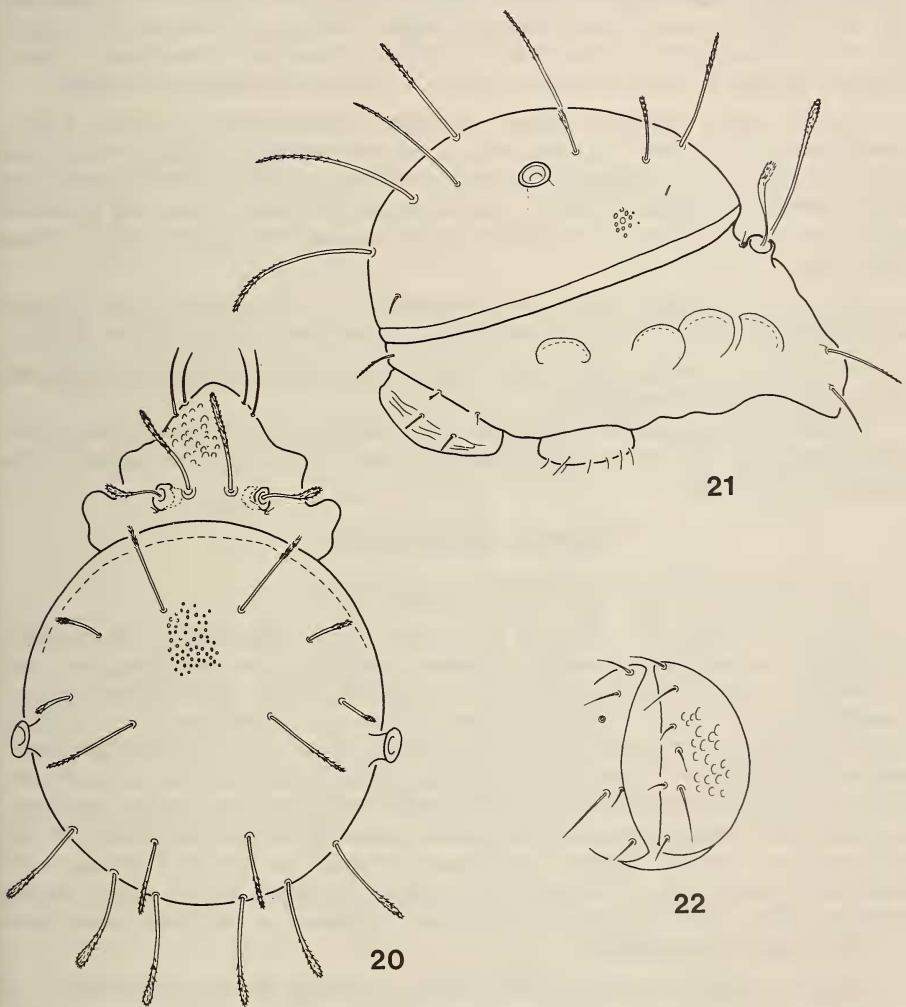
Type-species: *Baloghacarus hauseri* sp. n.

Remarks: All information concerning the family Hermanniellidae Grandjean, 1934 has been summarized by its author (Grandjean 1962*a*,*b*). On the basis of the characteristics be considered important, the new species could not be assigned to any of the known genera. They can be tabulated as follows:

	hair *in*	carina	number of notogastral hairs	position of hairs
Ampullobates Grandjean, 1962	short	none	17	transverse row
Sacculobates Grandjean, 1962	short	present	10	disarranged

Hermannobates Hammer, 1962	long	present	5	disarranged
Baloghacarus gen. n.	long	none	9	disarranged

I dedicate the new genus, with respect and gratitude, to Professor Dr. J. Balogh, my tutor and master in acarology.



FIGS. 20-22.

Baloghacarus hauseri sp. n.
20. dorsal side; 21. lateral side; 22. genital plate.

Baloghacarus hauseri sp. n.

Measurements: Length: 708-902 μ, width: 582-655 μ.

Dorsal side (Fig. 20): Rostrum wide, rounded. Rostral hairs arising laterally on prodorsum, lamellar hairs adjacent, longer and also laterally situated. Bothridia near each other on prodorsal surface; sensillus with a long and arcuate stalk and with a slightly incrassate, clavate and ciliate head. Interlamellar setae long, slightly widened, their distal third finely ciliate. Exobothridial seta minute, arising also near bothridium. Notogastral hairs with 8 pairs of setae similar to interlamellar ones, of diverse lengths, d_2 and e_2 short, p_1 and h_2 very long. Their proportions are well visible in a lateral view (Fig. 21). Hair p_2 at end of body short and simple. Sculpture of notogaster, or rather that of overlying secretion, consisting of elongate foveolae, extraordinarily heavy, therefore insertion points of all other hairs (c_1, c_2 etc.) not or hardly discernible.

Ventral side: Epimeres without neotrichy, epimeral setal formula: 3-1-2-3. Genital plate (Fig. 22) with 7 pairs of setae, 6 approximately in a single row, all about equal in length; 1 pair considerably longer, near fifth pair, removed from margin and further inwards on surface of plate. 1 pair of aggenital, 2 pairs of anal and 3 pairs of anadal hairs present; hair ad_1 considerably longer and more robust than the two other adanal setae.

Material examined: Holotype: Guatemala, AC/15; 3 paratypes, from the same sample. Holotype and 2 paratypes in the MHNG, 1 paratype (504-PO-79) in the HNHM.

Remarks: According to the generic diagnosis, the new species differs satisfactorily from all known Hermanniellids.

I dedicate the new species to my friend, Dr. B. Hauser, for his interest in the circumtropical soil fauna; the present material had also been collected and now studied on his instigation and support.

Acaroceras dechambrieri sp. n.

Measurements: Length: 267-286 μ, width: 198-213 μ.

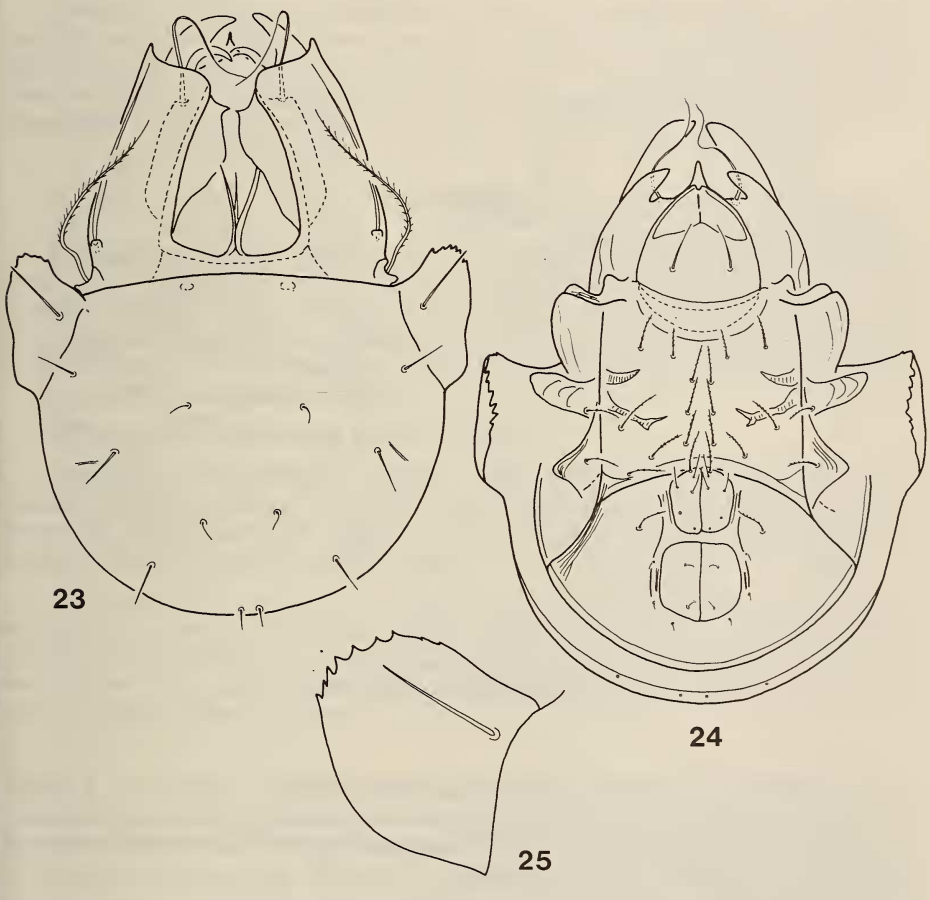
Dorsal side (Fig. 23): Rostrum with a long, acute apex, basally wide, straight, laterally with an auricular appendage. Prodorsal margin with an additional very long and inclinate lamelliform appendage and a falcately curved book-like excrescence. Lamellae wide, anteriorly straightly truncate, with a small lateral apex each; medially continuing in a thin membrane connected with the long, trifurcate interlamellar apophysis. Interlamellar hairs long, curved, their insertions covered by lamellae in the superior view. Rostral hairs also long and arcuate. Interlamellar setae long and slightly incrassate, originating near lateral margins and on surface of lamellae. Sensillus proclinate, filiform, with long cilia bilaterally. External side of pteromorpha (Fig. 25) with 7-10 large teeth, surface with some rugae. Notogastral hairs diverse in length and of highly varying thickeness. Hairs *ti* and *mas* minute and curved, all others — excepting minute setae *ps* — long, rigid and bacilliform.

Ventral side (Fig. 24): No great difference in length among epimeral hairs, all relatively long, ciliate, pro- and inclinate. Setae 1*a*, 2*a* and 3*a* originating along a single longitudinal line. Epimeral surfaces smooth. Some fine lines decurrent along outer margins of anogenital region, with an additional sculpture of fine lines just discernible also around genital and anal plates. These latter situated near each other, anal plate

far removed from posterior margin of body. Anal and especially adanal hairs minute, hardly recognizable.

Material examined: Holotype: Guatemala — AC/15; 7 paratypes, from the same sample. Holotype and 4 paratypes in the MHNG, 3 paratypes (505-PO-79) in the HNHM.

Remarks: The new species fits well into the genus *Acaroceras* Grandjean, 1932, standing nearest to the type-species described from Venezuela. However, the lamellae of the new species are wider, straightly truncate anteriorly, the interlamellar hypophysis is trifurcate, while in *A. odontotus* Grandjean, 1932 the lamellae are deeply excised, resulting in an inner and outer apex of equal length, the interlamellar apophysis is a



FIGS. 23-25.

Acaroceras dechambrieri sp. n.
23. dorsal side; 24. ventral side; 25. pteromorpha in lateral view.

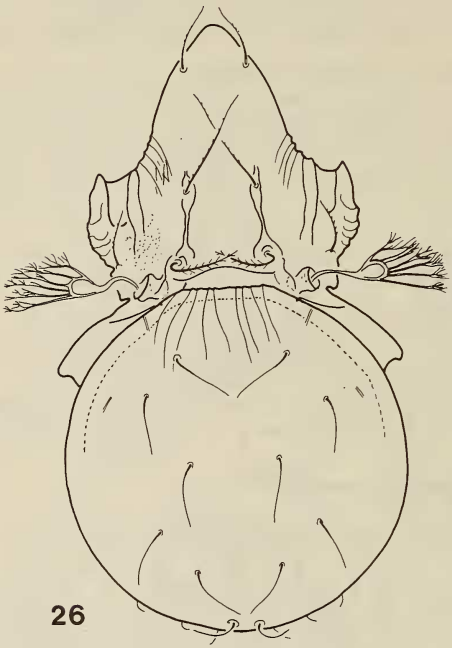
short and simple spine. There are differences also in the ventral sculpture and the length of the hairs.

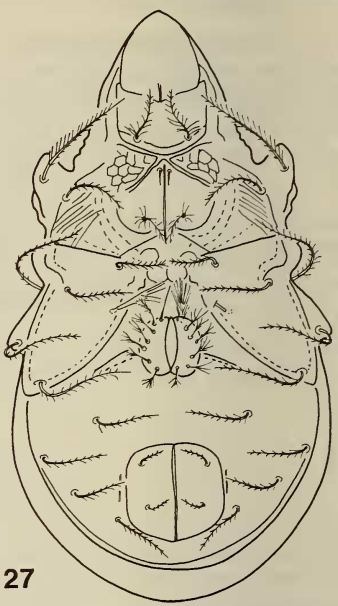
I dedicate the new species to its collector, M. Alain de Chambrier, Genève.

Sternoppia striata sp. n.

Measurements: Length: 252-267 μ, width: 139-152 μ.

Dorsal side (Fig. 26): Rostrum wide, emitting rostral hairs. Margins of prodorsum with ridges decurrent towards lamellae. Costula medially narrowing, lamellar





FIGS. 26-27.

Sternoppia striata sp. n.
26. dorsal side; 27. ventral side.

and interlamellar hairs widening. Sensillus clavately incrassate, followed by 6 lateral branches of gradually increasing length and terminal branching. Surface of notogaster with longitudinal rugulosity emitted from dorsosejugal region. Hair *ta* long, as also all notogastral setae, excepting shorter setae *ps*.

Ventral side (Fig. 27): With an incrassate, shield-like epimeral region, as characteristic of the genus; its anterior part with a polygonal, laterally with a rugulose sculpture. All hairs heavily ciliate. Aggenital and adanal setae also long and ciliate; latter ones in paraanal position.

Material examined: Holotype: Guatemala AC/15 (W); 15 paratypes from the same sample. Holotype and 9 paratypes in the MHNG, 6 paratypes (506-PO-79) in the HNHM.

Remarks: None of the species of *Sternoppia* Balogh et Mahunka, 1969 displays a notogastral sculpture of longitudinal rugosity. A polygonal sculpture in the epimeral region appears only in *S. reticulata* Bal. et Mah., 1969, a clavately incrassate sensillus only in *S. sphaerodendron* Bal. et Mah., 1979; this latter, however, has a wholly differend epimeral shield.

Genavensiidae fam. nov.

Diagnosis. Lamellae large, covering major part of prodorsum, with free cuspides. A robust tectum. Large, movable pteromorphae.

Type-genus: *Genavensia* gen. n.

Remarks: The family Oribatellidae Jacot, 1925 contained, so far, genera with movable and immovable pteromorphae. In the material under discussion, I found a genus standing near *Cultrobates* Willmann, 1930 and *Arcozetes* Hammer, 1958 as described hereunder. Accordingly, there exist two sharply delimitable generic groups, to be separated as two different families according to the diagnosis given above.

Genavensia gen. n.

Diagnosis: Lamellae fused, wide, yet leaving interlamellar region uncovered. A long, wide, simple tectum present. Genal tooth reaching to base of rostral hair. Pteromorphae extremely large, with a long, projecting portion, auricular, movable. 4 pairs of notogastral hairs and 1 pair of areae porosae, hence 10 pairs of setae on notogaster. 5 pairs of genital, 1 pair of aggenital, 2 pairs of anal and 2 pairs of adanal hairs present.

Legs tridactylous, heterodactylous.

Type-species: *Genavensia hungarorum* sp. n.

Remarks: Near *Arcozetes* Hammer, 1958, but the lamellae of this latter are separate, the pteromorphae straightly truncate anteriorly, not projecting anterior to dorsosejugal suture. A further difference appears to be the 3 pairs of adanal hairs on Hammer's figure, but this should be verified.

Dedication: The name of the new genus should commemorate the scientific attainments of Genevan scholars, principally of de Saussure but also the researches and activities of his followers in Central and South America, whereas the specific name should refer to the similar efforts of Hungarian workers and the joint projects of Swiss and Hungarian research workers.

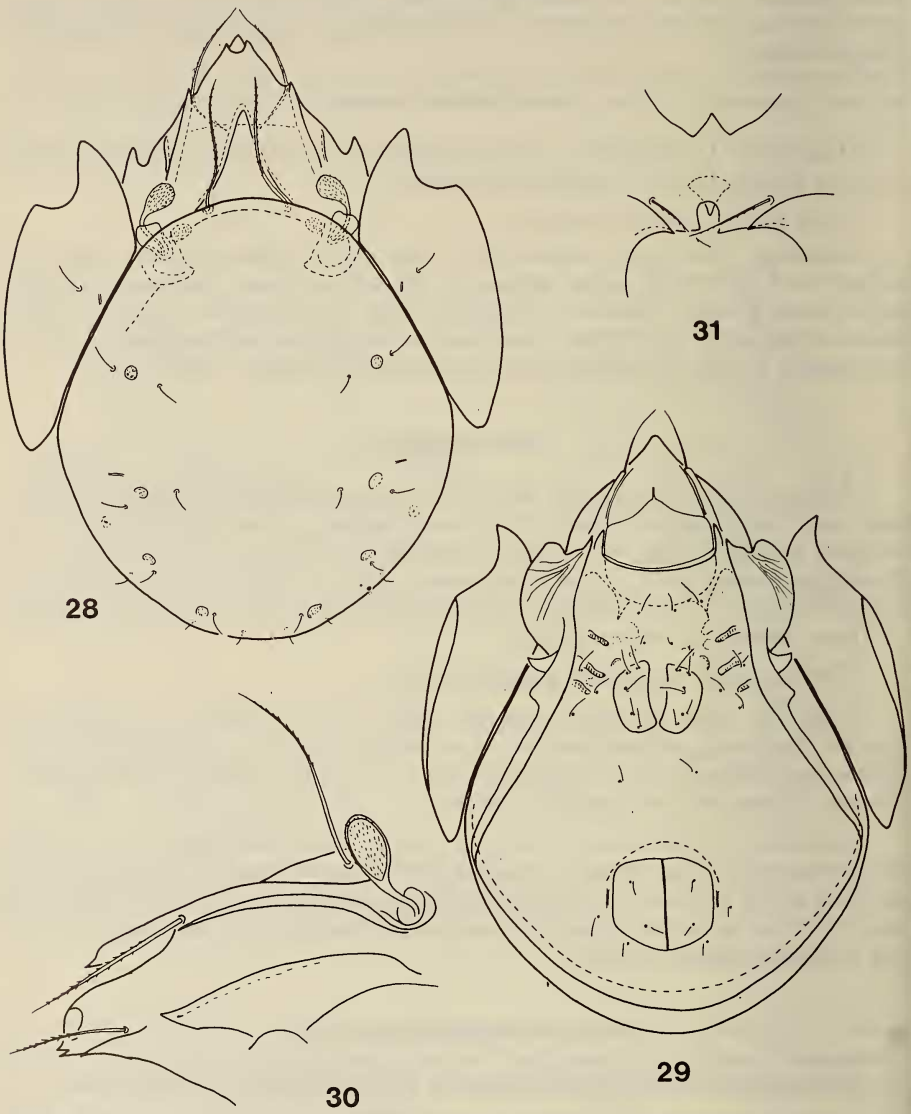
Genavensia hungarorum sp. n.

Measurements: Length: 281 μ, width: 223 μ, without pteromorpha: 189 μ.

Dorsal side (Fig. 28): Rostrum deeply excised (Fig. 31), nearly covered by the fused lamellae. Lamellar hairs arising laterally on lamellae, adjacent to a small external lamellar cuspis each. Interlamellar hairs not reaching lamellar apex. Sensillus heavily expanded, clavate. Tectum wide (Fig. 30), with a long, free cuspis. 10 pairs of well discernible notogastral hairs.

Ventral side (Fig. 29): Pedotecta 1 very large, its surface rugose. Epimeral hairs short, simple.

Material examined: Holotype: Guatemala AC/15 (W), deposited in the MHNG.



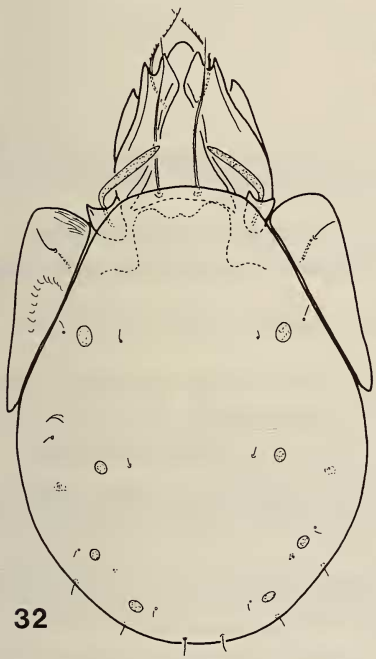
FIGS. 28-31.

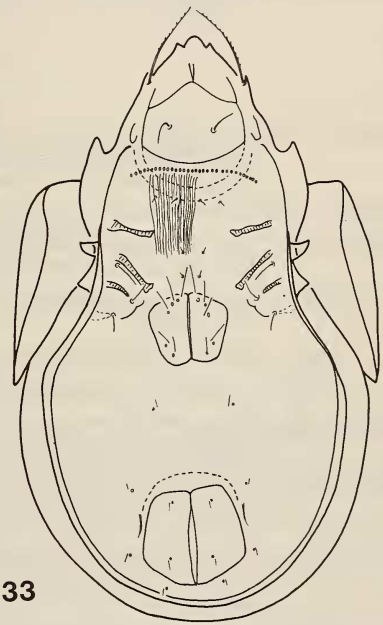
Genavensia hungarorum sp. n.
28. dorsal side; 29. ventral side; 30. prodorsum in lateral view;
31. rostral part in anterior view.

Remarks: On the basis of the difference given in the diagnoses, it differs from all known Oribatid species.

Cultrobates heterodactylus Willmann, 1930

As far as I know, the species has not been found since WILLMANN's description. The present material contained a single specimen, completely agreeing with the original diagnosis and the figure given therein. Though WILLMANN's description is satisfactory, some additional data might be submitted.





FIGS. 32-33.

Cultrobates heterodactylus Willmann, 1930.
32. dorsal side; 33. ventral side.

Measurements: Length of the examined specimen: 286 μ, width: 169 μ.

Dorsal side (Fig. 32): Rostrum concavely excised. Rostral hairs finely ciliate, lamellar and interlamellar hairs only slightly roughened. Stalk of sensillus very short, slightly incrassate already at base.

Ventral side (Fig. 33): Entire surface with fine and hardly discernible longitudinal lines. A convex transverse arc of tubercles below mentum. Apodemes very short, weak.

5 pairs of genital, 1 pair of minute aggenital, 2 pairs of very short anal and adanal hairs present.

Locality: AC/15 (W), 1 specimen.

Summary

Twelve Oribatid species have been found in a soil sample collected near Tikal, Guatemala. Eight species proved to be new to science (*Sphaerochthonius fungifer*, *Torpacarus callipygus*, *Epilohmannia xena*, *Nothrus willmanni*, *Baloghacarus hauseri*, *Acaroceras dechambrieri*, *Sternoppia striata*, *Genavensia hungarorum)*, and two new genera had also to be established (*Baloghacarus* and *Genavensia*). On the basis of the latter genus and of *Cultrobates* Willmann, 1930, also present in the sample, the establishing of a new family (Genavensiidae) was also indispensable.

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